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RELATING TO

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INSECTS, WORMS, ZOOPHYTES, &c.

THEIR HABITS, FOOD, RETREATS, OCCASIONAL APPEARANCE,
MIGRATIONS, NESTS AND YOUNG.

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Reason and Instinct. By Thomas Boyd, Esq.

The author of the paper on Reason and Instinct has evidently studied the subject far more than I have had the opportunity of doing, and yet, if you think your readers are not tired of it, I should be glad to make some remarks upon it.

As a proof that animals do exercise powers beyond those included under the term Instinct the paper in question is quite conclusive, but it seems to me to go beyond this, and to hide if not to obliterate the boundary line between man and the brute creation.

The rock on which almost all discussions on Instinct make shipwreck is the attempt to separate the various acts of an animal's life into two distinct classes, *viz.*—those dependent on Instinct, and those to be attributed to Reason: such a separation I believe to be simply impossible; the only one which is possible being one which goes far deeper than this and divides each act into its constituent parts; to take, for example, an "instance of pure simple instinct" (Zool. 6052 and 6054), the return of animals from a distance to their home, often by the use of other means than those supplied by their own limbs; if this be analysed we find first, the desire to return home (this is an impulse about which the animal has no choice), which is a part of his nature and true instinct: there is, secondly, a knowledge where that home is; this also is instinctive; he has not to learn it, he has no choice whether he will learn it or not; but he knows it; and then, in addition to these, there is the adoption of means by which this instinctive impulse, thus made possible by instinctive power, is carried out into actual life; and here there is choice—there is the deliberate adapting of means to the end in view, and this is Reason.

There is thus a radical distinction in the ideas included under the common term Instinct; and this seems to be borne out by the definition given (Zool. 6043). It is there called a "certain power or disposition of mind by which" animals do certain things; now, are "power" and "disposition" synonymous terms? and if not how is it that they are both used, and are both suitable here unless it be as I have suggested?

The classification of the principal forms of instinctive action (Zool. 6082, 6083) does not seem to me satisfactory, partly from being so much founded on the outward act, partly from the absence of the distinction pointed out above, and partly from the absence of several important forms. I should propose in its stead something of this kind:—

BRITISH MUSEUM

First, as the three main divisions of instinctive impulse, those which impel an animal

1. To self-preservation.
2. To the preservation of its species,
3. To submission to man.

(This last is entirely omitted but seems to me as truly instinctive as either of the others, and, as a motive to action, quite as important; it is universal in the animal world, and shows itself unmistakeably where the human soul is obscured by idiocy or madness).

Secondly, as subordinate to these, the various passions, as love, fear, revenge, &c.

And lastly, those separate impulses from which arise all the varieties of habit and mode of life, as swimming in the duck and herding in the buffalo.

This seems to include all cases of instinctive impulse, and then there is instinctive knowledge which consists in a power to do, without previous experience and without instruction, whatever in the ordinary course of nature each animal is called to.

And these two forms of instinct, combined with a rational use and choice of means to the ends so supplied and a power of learning, seem to me to embrace the whole range of animal life. We have seen their application to one of the simpler forms of instinctive action; let us look now at one of the more difficult, for instance at that quoted from Coleridge (Zool. 6050), of dogs preserving the lives and avenging the deaths of their masters: here, if submission to human authority and the subordinate passions of love and hatred be instinctive, they supply the motive of the various acts without any choice on the part of the dog; there is in this case just as much as in his return home from a distance, an end set before him which he is obliged by the laws of his nature to endeavour to carry out.

There do occur cases (Zool. 6489 and note) in which there appears a choice between the end actually carried out and some other, but I believe it will always be found that both ends are supplied by instinct; and consequently that it is not a question of choice, but merely presents this appearance on account of the nearly-balanced strength of the instinctive impulses: take, for instance, the case of a horse impelled on the one hand by the fear of some unknown object to run away, and on the other by his obedience to his rider to go forward; his conduct will waver just as either of these motives acquires ascendancy: he will be induced to go forward either by being allowed to assure himself of the harmlessness of the source of his fear, *i.e.* by the weakening of his impulse to run away; or by the application of the spur, *i.e.* by an addition to the impulse to obey his rider.

Similar to this is the moral character which sometimes appears on the face of the actions of certain animals; it arises, I believe, entirely from the moral character of the instinctive impulse, and is quite independent of the animal's will; and as the fundamental idea of morality is choice, animals having no choice have no moral character. The form of righteous retribution, which the revenge of a dog sometimes takes, is no proof of the individual excellence of the animal; though it is a proof, and no insignificant one, of the excellence of that instinctive impulse from which it springs, and which thus shows its connexion both in origin and object with those higher manifestations which it simulates.

If this be so, the line of demarcation between man and the brute comes out clear and distinct, for, in addition to this instinctive impulse and much of this instinctive power, in addition to far higher exercises of the rational faculty of adapting means to a given end than are found in the most intelligent animals, man has yet another power totally distinct from either of these—he has the power of conceiving and of deliberately choosing for his own an end or object of which he has had no experience, and which he may adopt or not according to his own free will. This it is which forms the great gulf between man and the brute; this it is which is the source of all moral action properly so called, and is, therefore, the foundation of all religion; this constitutes his claim to be "of kin" to God, and is uttered forth in those wondrous words "The Lord God formed man out of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul."

THOMAS BOYD.

Clapton Square, May 27, 1859.

Notes on the Bats and Birds of Jamaica.

By W. OSBURN, Esq.*

"Freeman's Hall, Trelawny, Jamaica,
May 7, 1859.

"My dear Sir,—It was only on my return here from a journey of unexpected duration in some of the southern parishes that I found your welcome letter awaiting me. It was a great pleasure to me to learn that you thought the information contained in my last important enough for more general diffusion, and I shall be extremely glad if the contents of this or any succeeding letters are considered worthy of a place in the pages of the 'Zoologist.'

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* Communicated by P. H. Gosse, Esq., F.R.S.

"Let me first answer the queries in your letter. I am well acquainted with your 'Naturalist's Sojourn,' and have gained from it all I know about the Bats of Jamaica, independent of my own observations. My list already amounts to ten species, and I have evidently many not included among yours. The little Chilonycteris grisea is very common hereabouts: the boys knock them down and bring them in. This was one of five species I procured in an immense cave in the limestone of Manchester. Besides this there is another so like it that I conclude it to be a Chilonycteris also, but much larger and with other well-marked distinctions. A species with the tongue protrudible an inch or more beyond the muzzle, furnished with reversed bristles towards the tip, much interested me: the lengthened jaws and round ears, which give it a remarkable likeness to a pig, render it very distinct from any of our other species I am acquainted with. From dissections I have made, especially with specimens taken early in the day, I am inclined to think the pulp of fruits is their nourishment. They are very robust and vivacious, bear confinement extremely well, and are to be found in great numbers in most of the limestone caves of this range of mountains, so that I have had unusual facilities for observing them. They lap water readily with the long tongue, and lick and clean their faces with it up to the ears, and when the first alarm at their position is over, lick the juice from oranges I have given them, but not greedily enough to make me feel satisfied it is their regular food. Artibeus jamaicensis I have never found in any cave, and, from the instances that have occurred to me, I believe it always reposes under the shade of some thicket: the negroes constantly tell me of them in their yams. But A. carpolegus is very abundant in a large cave near Mahogany Hall, the noise of their wings, when disturbed by the approaching light, sounding like the murmur of a distant sea: this large bat brings into its domicile incredible quantities of the kernels and fragments of large fruits, on which it feeds; the droppings and these remains of their feasts mixed gradually form deposits of great extent and many feet in thickness, on the floors of the caves. I have seen them extend completely through a cave, which could not be less than half a mile in extent, and at intervals in caves of much greater length. This deposit is formed of many species of fruits with which I am yet unacquainted, one especially about three times the size of an ordinary bullet; but the kernels of the mamee are extremely common, and the negroes gather the fresh-dropped bread-nuts from the surface, sometimes in great quantities. A sickly crop of young blanched plants struggle upwards in the darkness, and vast numbers of a large wingless Orthopterous insect with very large antennæ, apparently feed on the decaying matter, and large spiders with formidable jaws, very like the claws of a scorpion, creep slowly along the walls, and doubtless prey on these last. I remark that I have often met with these deposits of fruit where my captures seem to indicate only the presence of insectivorous bats, or bats of very small size. Is it possible that the large species migrate? But it would seem that these animals perform a very important part in the great scheme of nature, by sowing broadcast over the country the seeds of large fruits whose bulk precludes their transport by birds, and whose universal occurrence and rapid appearance in cleared spaces we should not otherwise be easily able to account for. A friend gave me a skin of a very large species he had recently shot, supposing at first it was a pea-dove; it seems about twenty-four inches in expanse, and is remarkable for a very distinct pale streak down the mesial line of the back; but it is, I believe, insectivorous. I think your collection contains at least four species I am unacquainted with, which would make the total number fourteen, instead of eleven, as the Society of Arts announce. But I have already entered more fully into the subject than I intended, as I hope when my specimens are sent to England to learn something of their names, &c., which here I have no opportunity of getting at.

"I spent a couple of days at the summit of the Dolphin,* and would gladly have spent as many months; but it is extremely inaccessible, except in the dry weather, and no accommodation near it, except the house of an old Scotchman, whose hearty hospitality sheltered me during my short stay. I did not remark anything unusual in birds, but the plants were most tempting. I have seldom left a place with more regret. The view of the sea on both sides of the island is indescribably fine. It is certainly higher than Bluefields, as the view extends over the ridge to the Santa Cruz and Manchester hills beyond. This latter (Bluefields), I am sorry to say, I never visited whilst in the neighbourhood. I know the turning from the high road towards the mountain extremely well, having often passed it on my way from Grand Vale to Savanna la Mar; but I can vouch for the accuracy of your sketch of the beautiful Cave Bay, along which I have often ridden.

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* A lofty peak in Lucea parish.—P. H. G.

"I have not met with the blue partridge yet, but, from what I hear, it is an eastern bird which does not come so far to the leeward as this. During the journey I have alluded to, I devoted the greater part of my time and attention to Ornithology, and it will perhaps be as well to conclude this letter with a few notes of observations I then made, and reserve these mountains for a future letter. My first day was across a forest district of the Black Grounds, partially cleared and known as Hector's River. As my first stage was to Oxford, I took the opportunity of making some further inquiries respecting the great macaw; there were several of Mr. White's old servants still on the estate, but I was unable to allay the suspicion and astonishment so strange a subject excited with the negroes, and anything they said was evidently quite worthless; but I have in other quarters been constantly on the alert for information: I have never seen anything of them myself, and they appear equally unknown to the negro sportsmen. A gentleman who has property, and has long resided in this district, however, told me he had *constantly* seen them: at my request, he was kind enough to enumerate the occasions he could distinctly remember; and it seemed about four or five times in twenty-five years, and then they were always flying at a great height. I think we may conclude from this that they certainly are not common in these lofty forests, but are to be placed in the list of 'occasional wanderers' to the island. The other three species are extremely abundant.

"The only bird of particular interest which occurred to me in the swamps of St. Elizabeth's was the beautiful Ortygometra Carolina; I shot it, after watching it some time, at the edge of a pool, busily feeding on what proved to be a leaf of some water-plant partially macerated, exactly in the state a botanical investigator would like it if he wished to examine the structure, the cellular portion easily separating from the fibrous. It is in this state I observe that water-plants afford nutriment to great numbers of these birds, of many allied species. The Santa Cruz mountains yielded me nothing of note but a *male* specimen of your Ephialtes grammicus; the colours rather brighter and size smaller than the females. Whilst exploring a large cave near Peru, another flew out of a recess: I could find no nest, but they do not seem uncommon in the Santa Cruz range. I have never, however, seen or heard of them on the north side, where the brown owl always refers to Nyctibius. At the foot of the same mountains I procured a beautiful little falcon, whose blue back and slenderer form make it very distinct from Falco columbarius. Vere is a most peculiar district as to the features of the country,—a plain of dark mud, which reminded me of the Nile Valley, and covered, where active cultivation does not keep them down, with an interminable thicket of cashaws. The Ornithology is peculiar also, chiefly from the immense numbers of Icterus leucopteryx, Centurus radiolatus and lowland Columbadæ which inhabit these last. The Banana birds especially abound: the nests, in the topmost branches of the logwood generally, were the most familiar objects of every morning's ride. All those I examined were evidently old and deserted, as the time for building had not arrived. There were often two or three in the same tree; this was, I presume, not because these birds build in companies, but from the same pair frequenting the same tree, and each year constructing a new nest. I would remark that there is certainly a distinction in the colouring of the quills and tail-feathers; in some they are black, in others olive-green: as far as I have observed, this did not seem to be sexual. Did you observe it?

"It may perhaps be as well here to mention the few particulars of an unknown bird I met with in this district, though the evidence I have to offer is not so satisfactory as I could wish. A friend had sometime before asked me if I knew there were two species of nightingale* (*Mimus*) in the island, but, as he was not sure whether the one we then saw devouring bird-peppers in the garden was the larger or smaller of the two, I did not think much of the remark; but in crossing a dreary region, half swamp and covered with the shrubs that flourish on tracts occasionally submerged, a bird flew across the track, which I at first thought was one of the cuckoos, from its size, and then saw was a nightingale, but at the moment, intent on other objects, the difference did not strike me. The next day I was again shooting over the same locality, a waste of great extent, which unites the Portland ridge with the main land, when I again saw the same bird. It was evidently a nightingale, but wanted the conspicuous white feathers in the expanded wings, and I think also in the tail. It flew to the topmost bough of a mangrove, and gave me ample proof of its vigorous powers of song: I watched it with the greatest interest for some time. During the song it every now and then rose perpendicularly about three feet, alighting in the same place, but without interrupting the song. I fired at it; it immediately dropped into the centre of the thicket beneath, but afterwards I had the mortification of seeing it glide off low over the ground; I pursued it without success. After much fatigue I caught sight of another, which I likewise missed, and then was obliged from fatigue to give up, for the day was already at meridian heat. I soon after met a negro with a gun, who seemed to know the species perfectly, and told me the larger, which were shy compared to the other species, were called "Spanish nightingales." I mentioned the circumstances to one or two planters in the neighbourhood, who seemed quite aware of the distinction. My visit in the neighbourhood terminated without affording me the opportunity I was so anxious for, of putting the question beyond doubt by procuring a specimen; but I wrote expressly to a gentleman living in the neighbourhood to procure me one, and am still in hopes of being able again to visit the locality myself. At all events my attention is awakened to the point, and I may fall in with it elsewhere: it seemed about half as large again as the ordinary species.

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* The mocking-bird, provincially called "nightingale."—P. H. G.

"It was during my visit to Vere that, at a friend's house, I for the first time fell in with your beautiful plates of Jamaica birds. I had only time for a hurried inspection, but perhaps you may like to have a few remarks on some of the species, as they occurred to me.

"Trochilus Maria I have never seen, probably from not having hitherto been sufficiently alive to the distinction between this gay little bird and its congener.

"Elania Cotta was a great puzzle when I first met with it near Savanna la Mar, on the 28th of August, last year. I did not again see it till I came to the mountains of Trelawny, where, during the winter, I saw it four or five times. I shot one in the pastures of Vere on the 9th of April last, and on my return here saw it a few days ago (on the 23rd of April) by the road-side. This still leaves it plenty of time to migrate. So far as my observations of its habits go, it is an extremely sluggish little bird; it will move only a few yards at the report of a gun. Like the Tyrants, or rather Myiobii, it sits apparently absorbed on a bare twig, and then suddenly begins hunting after an insect among the neighbouring leaves, but never, that I have noticed, makes a regular swoop after a flying insect, like Myiobius; but they are too rare for me to feel well acquainted with them.

"A large pear tree (*Persea*), near the house at Long Hill Pen, St. Elizabeth's, was during my visit in blossom: the insects attracted brought numerous little birds after them, which were toying in dozens among the branches: it was too high to distinguish them, but I shot several, only one of which was unknown to me. A friend suggested it was Sylvicola discolor in summer attire, and it certainly did look like it. Fortunately I preserved the skin, and your plate immediately put me right; it was Certhiola maritima. As the tongue was left in, an inspection put me beyond doubt. I much regret I did not know this at the time, as my impression is that there were more.

"None of my specimens of Sylvicola eoa (if I am right in their identity) have the rust-colour so suffused over the breast as in your plate. This colour is confined to the centres of many of the feathers of the under parts, so as to give the mottled appearance so common among birds. I first saw it very early in July last year among the mangroves that surround Savanna la Mar. On the 21st of the same month I shot three, all very deeply in the moult. On the 2nd of August I shot two; they were still moulting, so I did not procure more. They are very common round the town. The negro boys, from their colour, call them 'canaries.' I never saw them, except in or near mangrove swamps. On my arrival on the north side a pair were constantly in a tree close to a room I inhabited in Falmouth during a short period. I again fell in with them in the maritime district of the Ridge of Portland before alluded to, but now in much brighter plumage. I think it more than probable it will prove that this is a Jamaica species which does not leave the island. I postpone my notes on S. pharetra and S. pannosa (both very accurate plates) to another letter.

"Erismatura ortygoides? I transcribe a note I made on shooting one of these ducks:—

"'Camp Savanna, May 28, 1858. The bird mentioned by Mr. Gosse (p. 406) must, I think, be a young example of this species. This, a male in full breeding plumage, has no white on the secondaries, and the head, instead of being 'dappled black and ochry white' has a jet-black crown, with almost a pure patch of yellowish white on each cheek. This little duck is very common on all the ponds near here, feeding among water-lilies and other floating weeds. On alarm they leave the edges, and remain watching the intruders from the centre of the sheet of water. They dive constantly and with the greatest facility. The female is browner, without the patches on the cheeks. Mr. Hill's remark as to the mode of using the tail to clear the water from weeds, besides the worn state of the tail-feathers, receives further probability from the powerful muscles which move them.'

"I have since seen them at Long Pond Estate, in this parish, and again on a sheet of water on a very elevated plateau on the summit of the range which divides Clarendon from St. Ann's. In all cases the white patch on the cheeks is extremely conspicuous, much more so than the beautiful cobalt-blue bill, which is only distinguishable at a much nearer view than these wary little ducks are disposed voluntarily to permit. This distinctive mark makes your correspondent's choice of 'ortygoides' as the trivial name still more appropriate.

"I may mention that on the same elevated sheet of water (3000 feet above the sea) I was surprised to find great numbers of Fulica Americana. They were much tamer in this lonely place than usual: I shot one, and its mate watched its dying struggles with extreme surprise, two or three more feeding near, taking no more notice of the report of my fowling-piece than slowly to swim towards the opposite margin. The shield was, as you describe, not entirely white.

"The morasses of Vere also afforded me a specimen of Nycticorax, a male in the finest plumage, and what the negroes call a 'white crane,' which seems a species of Egretta; it is 40¾ inches in length and 57 inches in expanse; it may be E. leuce, which you include in your list.

"I hope soon to follow this up with another letter especially devoted to the birds of this central range.

"Yours very faithfully,

"W. Osburn.

"P. H. Gosse, Esq., F.R.S."

How does the Wolf drink?—This was a question recently put to me by some juvenile naturalists, and on my replying, "Most likely in the same manner as the dog," I was triumphantly referred to the Rev. J. G. Wood's 'Anecdotes of Animal Life,' fifth edition, p. 187, where it is stated that "Wolves drink in a different manner from dogs. Dogs, as we all know, drink by lapping with the tongue, but wolves draw the water into their mouths after the manner of horses. These peculiarities, together with the obliquity of their eyes, afford good reasons for separating them from the true dogs, of which they were once supposed to be the ancestors." The means of testing the accuracy of this statement are fortunately within reach of all persons who can visit the Zoological Gardens, and a reference to the best authorities on the matter in that establishment—the wolves themselves—at once settled the question in favour of their habit of lapping the water precisely as the dog does. Foxes and jackals also lap like the dog: an examination of their noses will show that any other mode of drinking would be difficult without an alteration of the position of the nostrils, and a greater development of the lips, and I imagine these two characters will generally be found a sufficient guide in determining the mode which every animal adopts in taking fluids into the mouth. I am induced to notice this subject, as Mr. Wood is now bringing out a very useful serial on Natural History, and, as one of the latest writers on systematic Zoology, may probably be quoted in the works of subsequent authors: I trust therefore he will pardon my inquiring on what ground he states that "Wolves draw the water into their mouths after the manner of horses."—*E. W. H. Holdsworth; 26, Osnaburgh Street, June* 6, 1859.

A List of the Birds of Banffshire, accompanied with Anecdotes.

By THOMAS EDWARD.

(Continued from p. 5268.)

Pied Wagtail (*Motacilla Yarrellii*). Wherever there is a stream or a quarry you will meet, in summer, with a pair or two of these active little insect-eaters. During winter, however, they are invariably to be seen here and there on lawns and about mills and farm-steadings. They remain with us all the year round. A pair built their nest a few seasons since on a ledge of rock at a road-side close to our harbour, and managed, in spite of the bustle of such a place, and though the nest was open to the gaze of all as they passed, to rear a brood of five young ones. They are in no way particular as to the choice of a place to breed in. I have found their nests quite exposed like the one referred to, and as often beneath stones and banks, and in holes completely hidden from view. One of these latter cases occurred in a sand bank. The hole was fully thirteen feet from the ground, and the nest placed about sixteen inches from its mouth. But what added more to the strangeness of the fact was that the whole bank was occupied by sand martins. One which I kept, having winged it, became quite tame, and was allowed to go about a garret amongst a host of mates; and no better or greater dainty could be given it than a piece of raw flesh. I have seen it, though incapable of using its wings, leap nearly two feet from the ground for a morsel of flesh, as also after flies.

The Gray Wagtail (*M. boarula*). This is our yellow wagtail, being known here by no other name. Though generally distributed throughout the county like the last, it is not nearly so abundant. Like the last, too, I have found this species breeding in company with the sand martin. In an old, but now disused, quarry near this town, on the left bank of the Doveran, a pair nest almost every summer: this they do amongst the stones. High above them, and amongst the softer mould, the martins rear their young. These birds like their pied brethren draw towards the towns in winter, and in frosty weather may be seen at our very doors.

Ray's Wagtail (*M. campestris*). This is, so far as I know, only an occasional visitor with us. It may breed, however, but I am not aware of it. I have found them breeding plentifully amongst the hillocks which stretch along the line of coast between the Don (Aberdeenshire) and Newborough; then again from Peterhead to Fraserborough.

Could we boast of similar suitable places, doubtless we should have them too, but this we cannot; hence the fact, as I suspect and have stated, that they are only visitors.

The Tree Pipit (*Anthus arboreus*). I have seen this bird on several occasions in various parts of our county, but have never yet met with its nest. That they all breed, however, there is no doubt, having been known to do so at a place called Dunlugas, and again near Inverness, Keithay, Rathiemay and Inveraven.

The Meadow Pipit (*A. pratensis*). Plentiful throughout the whole county.

The Rock Pipit (*A. obscurus*). Along all our coast. Both these birds are known here only by the name of "peep," the former being known more inland by the term of "heather peeper" or "cheeper."

Richard's Pipit (*A. Ricardi*). I have only seen this bird once within our limits, whilst resting on one occasion at the foot of the Knock Hill.

The Sky Lark or, as we have it here, the Liverock (*Alauda arvensis*), is universally distributed throughout the whole length and breadth of our county. In my opinion it is the most numerous bird we have, for go wherever you will in spring and summer and you cannot fail either to hear its heaven-inspiring strains, as it mounts the skies, or see the bird itself, or perhaps both.

Next to the mavis the lark is the bird for me, and has been since first I learned to love the little warblers of the woods and fields. How oft, Oh! how oft has the lark's dewy couch been my bed, and its canopy the high azure vault been my only covering whilst overtaken by night during my many ramblings after Nature; and Oh! how sweet such nights are, and how short they seem. Soothed to repose by their evening hymns, and again to be aroused at the first blink of morn by their early lays. Towards the months of October and November a great diminution of their numbers annually takes place. You might then travel a whole day and neither see nor hear one, or at most you would meet with very few. But about, or a little after, new year's day, they begin again to re-appear; and should snow come at or about that time then they may be seen in hundreds. Where they sojourn during their absence I have never as yet been able satisfactorily to learn. One thing is certain, however, that I have seen them frequently returning, though never departing, both from the east and the north in immense numbers.

The Wood Lark (*A. arborea*). I have seen but one of these birds within our district. This happened on May 27, 1850 in the delightful avenue of Duff House. The bird was alone and in song at the time.

The Snow Bunting (*Emberiza nivalis*). In large flocks during winter, and exhibiting generally amongst the various members a motley mixture of colouring, consisting of a pure white, a jet black, a dull tawny and a deep chesnut,—the beautiful white band, however, across the wings being conspicuous in all during flight. I have often met with this bird in different places here during summer, such as at the rocks of Melosoe, the Longman hill, and in Benvennis, but have never as yet been able to detect them breeding. They generally arrive here about the middle of October or beginning of November, and depart again in March or the first of April. They have a most beautiful song; though not loud it is very sweet, and it would seem that they begin early, for I have heard them frequently lilting away at it in February and March. On all such occasions they were either seated on the top of a wall surrounding a field, or on ricks.

The Common Bunting, or as we call it here, the Corn Bunting (*E. miliaria*), is not very numerous with us, and, in fact, I do not remember ever having seen them very plentiful anywhere, but I may be mistaken.

The Blackheaded Bunting or Ring Fowl (*E. schœniclus*). About in equal numbers with the last. It is called the "moss sparrow" by the country people. Mosses appear to be a favourite resort with them in our quarter. I have found their nests in pretty bushes, amongst reeds, and on the ground. There were a few, and only a few, whin bushes on a sandy knoll near Aberdeen when I was a boy, where I never failed to find a nest of these birds for many years in succession. I never saw any other birds at the spot but themselves. I remember having seen a black variety of this bird, and one almost yellow.

The Yellowhammer (*E. citrinella*). Far more numerous than either of the two last. Its common name here is "skite." This is another species by no means particular as to the choice of a site whereon, or in, to build. On one occasion I knew of a nest which was placed in a cart track, beneath a tuft of grass, and close by the wayside. The road was a bye-road to be sure, that is, one not much used, and quite narrow, there being only bare room for a cart and one person to pass. I saw the nest when forming, and dreaded, nay knew, its fate should a cart pass. I saw it again with eggs, and then with young, which were at the time about twelve or thirteen days old. No vehicle had passed, and I now began to hope that they would fly. Five days afterwards, passing that way, curiosity tempted me to look once more.

Fresh prints of horses' feet preceded me along the path. My old fears returned, as now with eager step I hastened on. The spot was gained. Alas! what a sight! the almost fledged young, four in number, and nest, amalgamated in one shapeless mass.

The Cirl Bunting (*E. cirlus*). One near Cornhill, of Park, is the only instance of the occurrence of this species with us, so far as I am aware.

The Chaffinch (*Fringilla cœlebs*). Abundant.

The Brambling (*F. montifringilla*). A winter visitor. A few may be met with almost every season. I have one, a male, which was procured here in May, 1848. They are sometimes taken by the boys catching larks and linnets in stormy weather, and are denominated "foreigners."

The Tree Sparrow (*F. montana*). In Duff House avenue, and, I believe, in several other localities throughout the county.

The House Sparrow (*F. domestica*). Numerous. We call it "spurgie" and sometimes "spurdie." Pied varieties are not infrequent. One of a jet black frequented our harbour for a long series of years. The sparrow, like the skite, does not stand very high in the estimation of many of the young folks; but why, I am at a loss to understand.

The Greenfinch (*F. chloris*). By no means in such numbers as the chaffinch and house sparrow, but pretty generally distributed throughout the county wherever there is wood. This bird is easily tamed: I have had them so trained as to sit on my shoulders and head, that is, on my bonnet, and to accompany me wheresoever I went, and without ever seeking to fly away. They knew me as well as I did them. If I had left them or hid from them they would have come to me, to any distance, so soon as I called to them or appeared in sight. That there is a great diversity both as regards shape and colouring, amongst the eggs of birds of the same species, is well known to all who pay the very least attention to these things. I have found this to be particularly the case as respects the greenfinch. In nearly every nest which I have seen scarcely two have been alike: some round, like a marble; some oblong, almond-shaped as it were; some large and others small; some beautifully mottled with minute reddish dots, sometimes on a pure white, and sometimes on a bluish or grayish ground, sometimes having large blotches of red, at others having no spots at all. I have found them with young as late as September. It would appear, at least so far as I have seen, that six generally form a brood of this species: I have found them, it is true, with four, as also five, but this very seldom. They are easily reared; in fact, give them plenty of food, that is, keep their crops continually crammed and themselves clean, and there is no fear of them.

The Hawfinch (*F. coccothraustes*). So far as I know, this is a rather a rare bird with us. Single individuals, very rarely pairs, are now and then to be seen in our higher districts. A pair are said to have bred in a wood near here called Whyntie. One was captured near Huntly, three winters since, by boys taking linnets, larks, &c.

The Goldfinch (*F. carduelis*). Time was when we Banff folks could have boasted of having the goldie in pretty fair numbers; but now they are nearly as rare as white corbies or dead craws. About thirty years ago, and previous to that, several were known annually to breed in many of the gardens throughout the town, as well as in orchards, gardens and plantations in the country. Bird-catchers, however, came and scoured the land, and the bonnie-painted goldie, with several others, grew less and less common by degrees. That some may yet nestle within our boundaries is quite probable, for small parties are occasionally seen in very severe winters by the sea-shore; but, by-the-bye, these may come from Morayshire, or from the other side of the Firth, where, I believe, they are rather plentiful, in summer at least. Next to, if not before, the golden crest and the longtailed titmouse, the goldfinch's nest is one of Nature's master-pieces. What a beautiful piece of workmanship! how exquisitely woven together! how light, compact, soft and warm its internal lining! and how complete! What hand could imitate the woolly, feathery, mossy, cup-formed, half ball-like structure? How vain the attempt! If any one wishes to have a cage-bird to cheer him with its song, let him get a male hybrid between this species and a canary, and I am sure he will not be disappointed. I have had them, and I have known many others who have kept them also, and I must positively state that they are the most lavish of their music of any cage-bird I know. I do not think that crosses with the chaffinch, or either of the linnets make such good songsters as with the present species; at least, I have never found, or known, them to be so.

The Siskin (*F. spinus*). Like the last once more numerous than now; bird-catchers having greatly thinned their numbers too: still we have a few. This is another very tameable bird. I have had birds of this species that have played with me like so many children, and seemed to enter into the spirit of the fun as well as I did myself, and that they understand my every move is an undeniable fact. They were kept in an open room, from which they might at any time have escaped, if they had so wished, but they never sought to fly away.

Their pranks in the cage must be well known to all who have ever had them. I have crossed these with the canary, but do not think they do so well as the goldfinch. So numerous were they at one time about Aberdeen that, having made a bargain with the bird-catchers to purchase all their dead birds, I remember that for one of any other species I got a dozen siskins, most of them females. I do not know whether they are as plentiful now, but it is not at all likely.

The Linnet (*F. cannabina*) or, as we have it, the Rose Lintie is plentiful. There is no house bird which we possess that rejoices in so many names as this one. It is the rose lintie so long as it retains its red breast; but when that is gone or wanting it is then the gray lintie, whin lintie, brown lintie, rock lintie and tree lintie. Cultivation is doing with us, for the poor lintie, what the bird-catcher leaves undone, viz., tearing down every whin, knoll and brae where it is possible for plough and spade to work their way. I have found the nest of this species three times in trees,—twice in a beech, and once in a Scotch fir. They are very easily reared: keep them clean, and give them plenty of meat, that is, as much as they can hold. The plain truth is, that most people who pretend to bring up young birds literally starve them to death, piecemeal, and all through sheer ignorance; they either do not know or do not choose to recollect that their lawful parents are always and constantly feeding them during daylight: such being the case, is it any wonder that so many of them die, when brought up by hand? when we bear in mind, that many have the notion that twice or thrice in the hour is quite sufficient to feed them; and talk of killing them by giving them too much. Nonsense, perfect nonsense. I say again you cannot give them too much; they will not take it. Water, too, is given them by many people: what foolishness! I have seen it poured down their very throats against all advice until the poor things sneezed again, and were likely to choke from its effects.

The Lesser Redpole (*F. linaria*). As the last was plentiful in the lower districts, this is so in the higher. In severe winters, however, large flocks descend to the lower grounds, where they remain so long as the storm lasts, when they again betake themselves to the hills and mountains, where they breed and remain during summer.

The Mealy Redpole (*F. borealis*). This is a rare species with us. Once on a hill near Huntly and twice on Benvennis are the only times I have met with them.

The Twite (*F. montium*). Another mountain as well as sea-shore rocky species. The most elegant of all our linnets. It is called the "heather lintie" with us, and is much liked as a house bird.

The Bullfinch (*Loxia pyrrhula*). This is another prize for the trapper; but besides those taken by the professionals great numbers are annually destroyed by our gardeners and nurserymen; some from the notion that they are destructive, and others to make prisoners of them. They may be destructive, but really I do not think them more so than any of their kindred species which frequent similar places, as the sparrow, greenfinch, chaffinch, yellowhammer, hedgesparrow, willow wren, common wren, or the bold little robin redbreast. Now it is a fact well known to ornithologists that although some of these do not themselves actually live on insects, these form the chief food for their young: this being the case, what an enormous and countless number of noxious and, allow me to say, truly destructive creatures must they thus consume and rid us of; but we poor short-sighted mortals do not know this. Oh, no! we do not see it in that light; we are all in the dark as regards the good they do us; but let them meddle with any of our seeds or fruits, and then the hue and cry is "Get guns, and shoot every one of them." We do not see the incalculable good they do, but catch hold at once of the little mischief they may occasionally do us. I hope a better day will soon arrive for these lively little birds, when they will be cherished and encouraged, rather than hated and destroyed. Surely intelligence and common sense will triumph in this respect before long. The bullfinch, though much admired as a cage bird, cannot be said to be much of a songster, it being more for its beauty than its music that it is kept; but it is susceptible of improvement in that way, being easily taught to whistle several tunes. My employer had a blackbird which whistled the "Merry Masons" and "Over the Water to Charlie" first rate; but to return to the bullfinch. A gentleman belonging to this place, the late J. J. Robinson, Esq., had one, which he bought from a shoemaker in some part of Germany, that sung, or rather "piped," as Mr. Robinson said, seven different airs: I have both seen and heard it, and must confess that it was a most able musician.

In coming to a close with the finches, I may just mention, that in rearing any of this tribe I invariably feed them on common oatmeal mixed with a little water, bruised hemp and rape seed; this I knead into a sort of paste, mixing it up twice a-day, to prevent it from becoming sour; and on this I have ever found them thrive remarkably; but, as I have already stated, you must give them plenty of it, and not allow the little creatures to hurt their tender throats in calling for food, which injures them and weakens their powers of song.

Ornithological Notes for May and June.—May 4th. A fine old male spoonbill, with a rich buff-coloured band across the breast, was shot at Hickling, in this county, and about the same time a male pied flycatcher: this is rather a favourite locality for the latter species on its arrival here in spring. Another male was obtained on the 5th, at Hunstanton. May 13. A woodcock was flushed to-day in a plantation at Spinworth, near Norwich, which probably had a nest close by. Six grasshopper warblers obtained at Surlingham, in the marshes adjoining the Broad, between the 7th and 27th of May; others heard singing up to the 12th of June. A woodcock's nest, with four eggs, was discovered at Aylmerton, near Cromer, on the 28th of April, in a valley planted with birch and oak: on the 19th of May two young ones were safely hatched and carried off by their parents, leaving the other two eggs in the nest. May 21. A pair of pied flycatchers, in adult plumage, shot at Beeston: these birds, though in small numbers, seem to visit us pretty regularly in spring, appearing almost invariably in certain favourite localities, either, as in this instance, on the coast, or in the vicinity of the Broads, as at Horsey and Hickling, where they occasionally remain to breed. Some singular varieties of nightingale's eggs were lately found in a nest at Ketteringham, in this county: they were all much lighter in tint than usual, and more or less spotted over the larger end, one of them exactly corresponding with the figure given by Mr. Hewitson, in his 'British Birds' Eggs' (third edition), as a rare variety.—*H. Stevenson; Norwich, June* 15, 1859.

Occurrence of the Hobby in the Fern Islands.—On the 15th instant I picked up, on one of the uninhabited Fern Islands, a fine specimen of the hobby (*Falco subbuteo*), a male, in adult plumage: the bird was uninjured and fresh. On inquiry I found that it had alighted, in an apparently exhausted condition, three days before, on the Brownsman Island, and had been caught by the keeper's children, from whom it had escaped the following day. This is, I believe, the first instance of the hobby being found so far north as the county of Northumberland.—*H. B. Tristram; Ferry Hill, Castle Eden, June* 18, 1859.

Variety of the Common Buzzard.—I have in my possession a very beautiful variety of the common buzzard, which was trapped at Lynmouth, some time this spring. This singular variety is nearly a pure white all over, the back of the head, wings, scapulars and upper tail-coverts being narrowly barred with wood-brown. The thigh-coverts are a pale buff. The bird is a female, and when trapped was in a strong and healthy condition.—*Murray A. Mathews; Merton College, Oxford, June* 8, 1859.

Occurrence of the Woodchat Shrike and Ortolan Bunting in Norfolk and Suffolk.—On the 29th of April a male woodchat was shot at Yarmouth: this bird had very nearly completed its spring moult, but from the appearance of the old feathers still remaining in the tail, had probably but just attained its adult plumage: the chesnut patch on the back of the neck and the tints of the back and wings were somewhat lighter than in some older specimens. On the 2nd of May another, also, I believe, an adult male, was obtained at Lound, near Lowestoft, in the adjoining county of Suffolk. The woodchat is a rare visitant to this eastern district, not more than one or two examples having been previously met with. A still greater rarity, in the shape of an adult male ortolan bunting, was shot at Lowestoft, on the 5th of May. It is doubtful if this species has ever been observed in Norfolk.—*H. Stevenson; Norwich, June* 15, 1859.

Unusual number of Hoopoes and Ring Ouzels in Norfolk and Suffolk.—Of late years the hoopoe has undoubtedly become not only a more regular, but a more numerous visitant to our coast in spring; nor do I think that, in this case, the apparent increase in number can be attributed to their being more observed and recorded now than formerly. No bird has, I believe, from its striking and beautiful plumage, been at all times more persecuted or more faithfully chronicled amongst the "rare bird" paragraphs of local journals than the hoopoe, and deeply to be regretted is that merciless slaughter which deprives us, in all probability, of a willing resident during the breeding season. To what cause may be assigned the unprecedented number that have during this spring appeared on our eastern coasts I am at a loss to determine, but between the 12th of April and the second week in May, six or seven fine specimens were killed in various parts of Norfolk, and others seen. A still larger number, however, appeared on the Suffolk coast, no less than seventeen examples having been killed, to my knowledge, of which thirteen were shot on the Warren and Denes, at Lowestoft, between the 28th of April and the 5th of May. Some of these birds were in most splendid plumage, from the depth and purity of the varied markings on the back and wings. The ring ouzels, generally arriving about the same time as the hoopoes, have also been extraordinarily plentiful this year, so much so as to become quite a drug in the bird market, and dealers were obliged to refuse, in some cases, to purchase more specimens. I have seen upwards of twenty of these birds, both adult and immature, shot in Norfolk between the beginning of April and the first week in May, most of them obtained within a mile or two of this city. Probably as many more were shot, but, not having been preserved, have escaped my [illegible]tice.—*Id.*

Occurrence of the Hoopoe near Barnstaple.—A hoopoe was shot nea[illegible]arnstaple a few days after Easter. Many were killed about the same period in th[illegible]ighbourhood of Oxford.—*Murray A. Mathews; Merton College, Oxford, June* 8, 1859.

A Robin's Nest in a Gardener's Pouch.—Most of our more familiar birds are known, I believe, occasionally to choose strange places for their nests, and therefore I do not give the following fact as anything very extraordinary, but only as another pleasing instance of the confidence which, through kind treatment, animals may be brought to repose in man. In the present case the bird was a robin, and the place chosen for its nest a gardener's leather pruning-pouch, which he had left for some time hung up in a shed attached to the garden in which he was employed. He occasionally took his meals in this shed, and observing that the robin was not disturbed by his presence, he placed crumbs of bread near the nest, which the robin took, and by degrees she allowed him to approach nearer and nearer, until at length she took the crumbs out of his hand whilst sitting on her eggs. But before the eggs were hatched the gardener required his pouch, in order to pursue his work, though of course he could not think of taking possession without furnishing robin with another equally comfortable home. This he did by ingeniously fashioning an old gaiter into a receptacle as near as possible like the pouch, and into it he carefully transferred the nest and eggs; and such was the good understanding established between the parties, that this ejectment did not in any way disturb the existing amicable relations. The robin sat on, and in due time the young birds were hatched. I saw them a few days ago in their nest, and by this time, I suppose, they are about ready to fly.—*Thomas Clark; Halesleigh, June* 13, 1859.

Dates of the Arrival of Migratory Birds.—The 'Zoologist' (Zool. 6563) contains a note of the arrival of migratory birds in the neighbourhood of Cheltenham: as the arrival of the birds mentioned appears to be generally earlier in the neighbourhood of Bridgewater, in Somersetshire, about fifty miles more southerly than Cheltenham, the dates of the arrival of these, and also the wryneck, may perhaps be of some interest.

	Chiffchaff.	Swallow.	Nightingale.	Blackcap.	Wryneck.	Cuckoo.
1851.	April 2.	April 3.	April 14.	April 10.	April 5.	April 16.
1852.	March 30.		„ 13.	„ 15.	„ 9.	„ 29.
1853.	April 4.	„ 6.	„ 15.	„ 21.	„ 13.	„ 21.
1854.	March 31.	„ 5.	„ 12.	„ 18.	„ 7.	„ 14.
1855.	April 5.	„ 15.	„ 14.	„ 28.	„ 17.	„ 15.
1856.	March 21.	March 28.	„ 22.	„ 13.	„ 6.	„ 23.
1857.	„ 30.	April 12.	„ 10.	„ 17.	„ 11.	„ 23.
1858.		„ 8.	„ 11.	March 31.	„ 10.	„ 18.
1859.	„ 25.	„ 10.	„ 12.	April 20.		„ 20.

The chiffchaff, nightingale and blackcap were first heard by myself, in my own garden, at the dates given; the other three birds were heard or seen in the neighbourhood by myself or others; and of these it is possible that the arrival was sometimes earlier than was observed, but I think not much earlier, and perhaps not often, as I keep a pretty sharp look out. It will be seen that the arrival of the nightingale has been remarkably regular, excepting in the year 1856: I cannot account for the late arrival in this year, but had the bird arrived earlier, or at least had sung earlier, I am confident I should have heard it. In 1858 the blackcap was as irregularly early, for which also I can assign no cause.—*Id.*

Occurrence of Rare Birds near Worthing.

By John C. Wilson, Esq.

The subjoined are notices of the occurrence of some of the rarer British birds in this neighbourhood, within the last few months, and which, I believe, have not yet been chronicled in the pages of the 'Zoologist.'

Roughlegged Buzzard. Female, October 29, 1858; male, March 10, 1859.

Hoopoe. Male, April 25, 1859; female, April 5, 1859.

Kentish Plover. Two females, April 3 and 6, 1859.

Sclavonian Grebe. Male in full summer plumage, April 11, 1859.

Sandwich Tern. Male, May 21, 1859.

I also subjoin a list of a few rare birds which have occurred in or about Worthing, within the last few years. For the observation of many of them I am indebted to Thomas Wells, a most intelligent and trustworthy birdstuffer in this place; many, however, I have personally examined.

Common Buzzard. November, 1855. During the four years previous to that date six specimens were obtained.

Roughlegged Buzzard. December, 1850. Arundel.

Kite. Male, 1851.

Peregrine Falcon. Male, 1850; Female, September, 1853, taken on the rigging of a vessel off Shoreham.

Marsh Harrier. June 14, 1854.

Hen Harrier. Male, autumn, 1853; female, autumn, 1854.

Great Gray Shrike. Male, July, 1853.

Pied Flycatcher. Spring, 1853; male and female, spring, 1854, not perfect plumage; spring, 1855, male in full plumage: April 29, 1856, three young males, one old female; male, April, 1858.

Hoopoe. Specimens are met with annually. In April, 1855, seven were brought to Worthing, besides several others that occurred in other parts of the county of Sussex. It has been obtained in the immature plumage of a bird of the year. This would suggest the probability of its having been reared in the neighbourhood.

Waxwing. Male, January 7, 1852.

Lesser Spotted Woodpecker. Male and female, April, 1855; and a male March 1, 1859.

Whitewinged Wagtail. Generally occurs in the course of the year; a specimen has been taken this spring.

Grayheaded Wagtail. A most magnificent male of this rare species was taken in April, 1855, and is now in the possession, I believe, of Colonel Carr Lloyd, of Lancing. The head and nape are of a beautiful blue gray, and the difference of colour between those parts and the back is most marked. A female was obtained in April, 1856, but its similarity to the female of the common yellow wagtail is so great that I am led to doubt its identity with the rarer species; the bird is in my own collection.

Shorttoed Lark. Caught at Brighton. I am assured by Mr. Wells, who saw and examined the bird, that it could not be mistaken for any other member of the family.

Snow Bunting. Male, June 7, 1854.

Ortolan Bunting. A male was taken on the beach, close to the town, in May, 1853.

Rosecoloured Pastor. August, 1855, and July 31, 1856.

Golden Oriole. Young, summer, 1852.

Bluethroated Warbler. April, 1853; a male was seen in April, last year.

Black Redstart. Males and females have been met with occasionally, in winter, for the last six years, and doubtless also before the commencement of that period.

Dartford Warbler, of either sex, occasional, though rare. I have obtained one or two specimens taken in the neighbourhood. The dates I have registered are, male and female, summer, 1853; old male, 1857; young, 1858.

White Spoonbill. Young, October, 1856.

Wood Sandpiper. August, 1851, three; August 4, 1856, one; August 22, 1857, one; August 27, 1857, one.

Common Snipe. August 27, 1857.

Curlew Sandpiper. Male and female, August 26, 1858.

Little Stint. September 20, 1855.

Temminck's Stint. June 7, 1852. Four have been obtained.

Landrail. Male, January 28, 1858. Unusual at this time of year.

Purple Sandpiper. January 23, 1857.

Gray Phalarope. Female, October 8th and 9th, 1857.

Smew. Male, January 1855; female, January, 1856.

Redbreasted Merganser. Male, spring, 1853.

Eared Grebe. Young, winter, 1856.

Great Northern Diver. May 5, 1854, male; November 15, 1857, male.

Ringed Guillemot. Taken in a field, August, 1854.

Sandwich Tern. Another specimen of this tern was seen October 18, 1858.

Ivory Gull. 1845.

Glaucous Gull. December, 1857.

Manx Shearwater. 1847.

Forktailed Petrel. December, 1856, males and females.

JOHN C. WILSON.

Montague House,
Worthing, Sussex.

"*Is the Edible Frog a true Native of Britain?*" *

By JOHN WOLLEY, Esq.

SINCE Mr. Alfred Newton, in his important communication (Zool. 6540), has introduced my name as having formerly proposed the question whether the edible frog is a true native of Britain, and as Mr. Bell's latest remarks on the subject (Zool. 6565) are before me, I venture to send you what seems to me fairly to be said upon the subject.

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* See 'Zoologist,' p. 1821.

I cannot see that Mr. Bell's belief that the edible frogs being "indigenous to this country rests on irrefragable testimony" is sufficiently securely founded.

Granting that Mr. Thurnall's discovery at Foulmire makes it in the highest degree probable that the recollections of Mr. Bell's father (so long ago made known to his son), of frogs that he considered of a different species from the common frog, and which were called, in the neighbourhood of Foulmire, "Whaddon Organs," referred to the frogs who were progenitors of those edible frogs of Mr. Thurnall's discovering, nevertheless it scarcely seems a necessary consequence of the edible frog being at Foulmire "nearly a hundred years ago" that it was truly indigenous to Britain.

There are quadrupeds, fishes, mollusks, and plants believed to have been introduced to this country far more than a hundred years ago, and now naturalized and wild: why may not an amphibious creature have been so introduced by man, and, as in many other cases, no record been kept of its introduction? This would particularly be likely to happen in the case of a being of some use to man. How many French families of the upper classes, who value these frogs highly, have from time to time settled in England!

How a supposed new species of frog may have been brought into a country and turned out in numbers, without there being any desire on the part of the introducer to make the fact known, Mr. Newton's account of Mr. Burney's experiments is sufficient proof,—his turning out in England two hundred edible frogs and a great quantity of their spawn, in 1837, about two years before the publication of the first edition of Mr. Bell's 'History of British Reptiles,' and thirteen hundred individuals in 1842, the year before Mr. Thurnall's discovery at Foulmire, and nevertheless for the twenty-two years subsequent to Mr. Burney's first bringing over the frogs his avoiding making his experiments in any way public, though indeed they became known, sooner or later, to Mr. John Henry Gurney, who first communicated them to Mr. Newton.

It is rather remarkable that Mr. Bell, in the first edition of his work on British Reptiles, should so clearly indicate his disbelief in the edible frog as a British species (*vide* Hist. Brit. Rept., 1st ed., art. "Scottish Frog"), though he figures, for the benefit of the Scottish naturalists, a specimen of the edible frog sent to him from France by M. Bibron (p. 104). For it would hence appear that his father's account of the "Whaddon Organs," which had been told to him "as long ago as he could recollect," had not struck him as referring to the edible frog until Mr. Thurnall's discovery was announced.

Mr. Bell gives us, in this first edition, p. 86, an account of the introduction into Ireland, now about a hundred and fifty years ago, of the common frog, which in the same passage is reported to have shortly spread over the whole country. In the previously prevalent belief that no reptile had existed in Ireland, at all events since the time of St. Patrick, a weighty reason appears for the preservation of the account of their subsequent introduction. That, however, even this account was not generally known, appears from Mr. Bell being indebted to Mr. W. Ogilby for a reference to it.

The edible frog has not appeared, as far as I know, in other localities than Foulmire in this country, excepting where it is known to have been newly turned out. In a more recent case of a species of Amphibia new to our Fauna, it was soon found at the extreme ends of the island as well as at intermediate places, though I admit that this does not prove much, for we certainly have some other species of Reptilia and Amphibia very local.

I have heard reports that since the draining of Foulmire the edible frog has not spread in the neighbourhood, but has disappeared. I must acknowledge, from former observation, that I never saw in this country a more peculiar place than Foulmire was. Deep, clear springs in turf, lying near together, perhaps slightly warm; at all events, the vegetation about them seemed luxuriant. It may be that this peculiarity of character made it especially suitable for the edible frog.

We must not forget the assertions of Pennant and Shaw, though without detail, that the edible frog is a British species, though Mr. Bell, in his first edition, refers to these assertions as errors. There can be no doubt he was right in believing that Dr. Stark was in error in exhibiting at the Zoological Society, in 1833, a skeleton of a frog, caught near Edinburgh, as the edible, or indeed, as Mr. Bell (*vide* Brit. Rept., 2nd ed.) afterwards saw, as any other species than the common frog.

But I must repeat that, with all respect for the opinion of Mr. Bell, I can hardly bring myself to believe that we have at present "irrefragable testimony" of the edible or esculent frog being indigenous to Great Britain.

I am afraid we must wait for the discovery of some old fen bones, undoubted allusions in old books, or some such testimony, to strengthen what Mr. Bell has hitherto advanced; for at most he has proved or rendered highly probable nothing more than the existence, a hundred years ago, at one spot in the island, of the edible frog, apparently abundant,—the same spot where it was found, apparently indigenous, or at least naturalized, now nearly sixteen years ago.

The numerous competent naturalists who are familiar with the Eastern Counties' fens in their less-drained condition, and who, as far as I know, never observed in them anything like what the "Whaddon Organs" are believed to have always been, afford in the question negative evidence not without some little weight; at least, it makes one believe that the edible frog was long nearly, if not quite, confined to Foulmire. Still we must not forget Shaw and Pennant.

But it scarcely seems past all doubt whether or not the term "Whaddon Organs" referred to a peculiar species of frog; for the fen Foulmire is out of the general fen district, and the village Whaddon, being close to it, might get credit for its numerous frogs and toads, which I believe to have been beyond the experience of the rest of that immediate part of the country.

Still, every respect is of course due to the opinion of Mr. Bell, senior, as recorded by his son. But supposing there were any mistake, it appears that there was time, after Mr. Burney's introduction of his first edible frogs, for a good many of them to have moved themselves, or to have been moved, to Foulmire, and to have increased there in the course of the six years that intervened before Mr. Thurnall discovered them. But, whether there be any mistake or not, Mr. Burney's idea may have struck some one else many years sooner than it did Mr. Burney, or than Mr. Bell lived within reach of Foulmire.

JOHN WOLLEY, JUN.

Beeston, June 18, 1859.

Description of the Larva of Eupithecia Haworthiata.—This larva seems to be little known, and has not, I think, ever been described. I have, however, taken it in plenty wherever its food-plant, Clematis vitalba, occurs. It is very short and stumpy, the ground-colour pale bluish or yellowish green, with three horizontal dorsal stripes of a darker shade: these stripes are often very indistinct, and sometimes altogether wanting. The head is dusky, spotted with olive, and the body sparingly studded with minute black dots. It is full fed from the middle of July to the middle of August. It feeds inside the unopened flower-buds of Clematis vitalba, commonly known as the "Traveller's Joy." When nearly full it frequently feeds among the stamens of the expanded flower, and may then be beaten into an umbrella: it also feeds on the common white garden Clematis. The presence of the larva may generally be detected by the blackened appearance of the flower-buds. When it has eaten up the inside of one bud it comes out and bores into a fresh one: I have frequently seen a larva busily engaged in this operation. In shape and general appearance it is closely allied to the larva of Eupithecia tenuiata. The pupa is enclosed in a very tightly-spun earthen cocoon. The thorax and wing-cases are green, and the abdomen red. The perfect insect appears in June and the beginning of July, and is abundant among Clematis vitalba: it flies about with extreme rapidity in the hot sunshine, and it is almost invariably wasted when caught; when fresh the upper part of the abdomen is orange. The larva feeds very rapidly.—*H. Harpur Crewe; Breadsall Rectory, Derby, June* 4, 1859.

Description of the Larva of Eupithecia innotata.—This larva has, I think erroneously, been said to feed upon various low-growing plants: I have been acquainted with it for some years past, and never beat it from anything but ash. It is long, smooth, rather slender and tapering towards the head. The ground-colour is a uniform dark green, with a waved, yellowish spiracular line. The segmental divisions are yellow, and on the anal appendage is a dark purplish spot. The belly is whitish, and wrinkled with a dark green central line running the whole length. It feeds upon ash, and appears to prefer the tall suckers in hedge-rows. It is widely dispersed, but nowhere common. It is full fed from the end of August to the middle of September. The pupa is long, rather slender and tapering. The thorax and wing-cases are dark olive; the abdomen still darker, almost black, tinged underneath with red. It is either enclosed in a slight earthen cocoon, at the foot, or under moss on the trunk, of the tree. My friend Mr. Greene has already given the entomological world directions how to find it. The perfect insect appears in June and July.—*Id.*

Observations on the Species of the Genus Prosopis of Fabricius, belonging to the Family Andrenidæ, with Notes on the Economy of P. dilatatus. By FREDERICK SMITH, Esq.

In the year 1842 my first Hymenopterous Essay was published in the 'Transactions of the Entomological Society;' it contained descriptions of nine British species of the Genus Prosopis (Hylæus); since that period much additional material has come to my hands. In the year 1848 I again published descriptions of the species: at that time I had not acquired much additional information, but added one species and reduced a second to a synonym. In my 'Monograph on the Bees of Great Britain,' published in 1855, I again added a species, and reduced another to a synonym: the latter circumstance was inevitable, having obtained the nest of P. cornutus, from which I bred P. plantaris (male) and P. cornutus (female).

In the 'Entomologist's Annual' for 1859, I announced the capture of a specimen of the rare P. dilatatus, and also noticed the fact of having found a stem containing the nest of a species of Prosopis, which I expected would prove to be that of P. dilatatus: this opinion has proved to be correct, but I was not prepared for the entire results;

when these presented themselves, I exclaimed to myself, "Oh! how much do we learn from the perusal of a single chapter in Nature's pages! how completely are our most careful deductions set at nought, and our most favourite theories scattered to the winds!" but your readers can only feel an interest in a knowledge of the results; these I will proceed to lay before them.

It appears necessary, in the first place, to add a few words explanatory of the synonyms given in my last work on these insects; that of the first species will remain unchanged: the sexes I know to be correctly assimilated, having bred them from their cells, and also taken them repeatedly *in coitu.*

Of the P. annularis of Kirby two sexes are described in the 'Monographia' of that author, and I have always considered them to be correctly united. I have carefully compared specimens with Kirby's types, and have described them in my various papers. The disclosure of the sexes of P. dilatatus from the nest, shows that the hitherto-supposed sexes of P. annularis belong to different species, the female being that sex of P. dilatatus, and the male being that of P. hyalinatus. This discovery enables me to publish the correct synonyms of the genus, having now bred four species, and the remainder offering very distinct specific characters. The following list I believe to be correct:—

1. *Prosopis communis,* Nyland. Revis. Ap. Boreal. p. 234.
   Melitta annulata, Kirby, Mon. Ap. Angl. ii. 36, 3 (nec Linn).
2. *Prosopis dilatata,* Nyland, Revis. Ap. Boreal. p. 234, ♂.
   Melitta dilatata, Kirby, Mon. Ap. Angl. ii. 39, 5, ♂.
   Melitta annularis, Kirby, Mon. Ap. Angl. ii. 38, 4, ♂.
3. *Prosopis signata,* Smith, Mon. Bees Great Brit. p. 12, 6, ♂, ♀.
   Sphex signata, Panz. Faun. Germ. 53, 2.
4. *Prosopis cornuta,* Smith, Mon. Bees Great Brit. p. 10, 4, ♀.
   Prosopis plantaris, Smith, Zool. vi. 2205, 6, ♂.
5. *Prosopis punctulatissima,* Smith, Mon. Bees Great Brit. p. 11, 5, ♂, ♀.
6. *Prosopis hyalinata,* Smith, Mon. Bees Great Brit. p. 13, 7, ♂, ♀.
   Melitta annularis, Kirby, Mon. Ap. Angl. ii. 38, 4, ♂.
7. *Prosopis varipes,* Smith, Mon. Bees Great Brit. p. 14, 8, ♂, ♀.
8. *Prosopis variegata,* Fabr. Syst. Piez. p. 259, 1, 2.

I have given the neighbourhood of London as a locality for this species, but this is an error into which I was led from having captured the supposed male, which I now find to belong to P. hyalinatus. Mr. S. Stevens took both sexes in Sussex, but I never suspected their affinity. In the Kirbyian collection I had seen the male, which the monographist himself had united to the species without any remark or indication of doubt, so that nothing but positive observation, proving him to have been mistaken, could have warranted me in differing from so high an authority. The fact of the male of P. hyalinatus being identical with that given as that of Kirby's P. annularis, had escaped my observation.

The cells of Prosopis dilatatus, which I found at Pakefield, in Suffolk, were constructed in the dead stem of some umbelliferous plant; the parent bee had formed a burrow five inches in length and one in diameter, the tube being lined with a delicate colourless transparent membrane; each cell was four lines in length, and separated from the next in succession by portions of the excavated pith; the cells were seven in number, six only being provisioned and closed; the food stored up consisted of semiliquid honey. In a few days the young larva appeared, and at the expiration of about ten days were full fed and entered upon a lethargic state, in which they continued from July, 1858, to May, 1859; at the beginning of the latter month they assumed the pupa state, and gradually progressed to the imago or perfect condition; two males were developed on June 10, two females on the 15th, and two on the 16th. Had the bee completed her task before I discovered the nest, in all probability the number of males would have equalled that of the females.

The economy of this genus was first discovered by Mr. Thwaites in 1841, previous to which they were considered to belong to the parasitic division of the Apidæ; since that period I have bred P. communis, P. dilatatus, P. signatus and P. hyalinatus. All the species usually burrow in the stems of dead plants, bramble, sticks, &c.; but some of the species at times deviate from the usual course: thus P. signatus occasionally burrows in the mortar of old walls, and I once had a hollow stone given me which contained cells of P. communis.

In conclusion, I should observe that the spots described as yellowish white in the 'Monograph' are snow-white in specimens when first developed. The Prosopis variegata has not been captured, to my knowledge, since Dr. Leach is supposed to have taken it at Kingsbridge, Devonshire; and the correctness of keeping it in the British list requires confirmation.

FREDERICK SMITH.

Proceedings of Societies.

ENTOMOLOGICAL SOCIETY.

April 4, 1859.—Dr. GRAY, President, in the chair.

Donations.

The following donations were announced, and thanks ordered to be presented to the donors:—'Mémoires de la Société de Physique et d'Histoire Naturelle de Genève,' Tome xiv. 2e Partie; presented by the Society. 'Mémoires couronnés et Mémoires des Savants étrangers,' publiés par l'Académie Royale des Sciences, des Lettres et des Beaux-arts de Belgique, Tome xxvii.; by the Academy. 'On the Digestive and Nervous Systems of Coccus Hesperidum,' by John Lubbock, Esq., F.R.S., F.L.S., F.G.S.; by the Author. 'The Zoologist' for April; by the Editor. 'Première Centurie de Longicornes du vieux Calabar,' par Auguste Chevrolat, &c.; by the Author. 'A Manual of British Butterflies and Moths,' Nos. 27 and 28; 'The Entomologist's Weekly Intelligencer,' Nos. 128—131; by H. T. Stainton, Esq. 'The Athenæum' for March; by the Editor. The Literary Gazette' for March; by the Editor. 'The Journal of the Society of Arts' for March; by the Society.

Election of Members.

W. S. Coleman, Esq., 7, Ampton Place, Gray's Inn Road; and W. Jeekes, Esq., 22, Camden Road Villas, Camden Town, were balloted for and elected members of the Society.

Exhibitions.

Mr. Stevens exhibited some beautiful Coleoptera, taken by Mr. Wallace, at Dory, New Guinea, amongst which were Eupholus Cuvieri, E. Schonherri, Promechus splendidus and Oxycephala speciosa. He also exhibited, from the same locality, a most extraordinary nondescript Dipterous insect, having long horn-like appendages to the eyes.

Mr. Smith mentioned that amongst the Hymenoptera recently sent by Mr. Wallace from Celebes, was a species of Dolichurus, which was interesting from the fact that the only other known species of this remarkable genus, D. corniculus, is European.

Mr. Janson exhibited five species of Coleoptera hitherto unrecorded as British, with notes of their localities, &c., as follows:—

1. *Oligota atomaria*, Eric., Kraatz. Colney Hatch, December 27, 1855. Distinguished from O. pusillima by its broader form and its pitchy black legs and antennæ.
2. *Stenus proditor*, Eric., Kraatz. Near Finchley, December 5, 1858.
3. *Platystethus nitens*, Sahlb., Kraatz. Highgate.
4. *Abracus granulum*, Eric., de Morseul. Walthamstow, Essex, May 18, 1851.
5. *Læmophleus duplicatus*, Waltl., Eric. Beneath bark of a dead oak near Highgate, March 27, 1859. Readily recognised from its congeners by the two impressed longitudinal lines on each side of the thorax, and the truncate elytra of the male.

Mr. Janson also exhibited the following Coleoptera:—

Carabus granulatus, Linn. Variety, having one elytron bright green, the other and the remainder of the upper surface of the usual brassy tint. Hammersmith, March 24, 1859.

Lyctus brunneus, Steph. (Xylotrogus). Felled elms, Highgate, August 11, 1858.

Stenolophus elegans. Ditch by the Fort below Gravesend, May 28, 1858. One specimen.

Lymnæum nigropiceum, Marsh. Southend, August 3, 1858. One specimen.

Mr. Janson announced that having recently placed his collection of Trichopterygidæ in the hands of the Rev. A. Matthews, that gentleman informed him that he has identified therein the following species, previously unknown as inhabitants of Britain:—

Ptinella ratisbonensis, Gillm., *var.*
P. tenella, Eric. (*microscopica* [Waltl. *in litt.*], Gillm.)
P. angustula, Gillm.

These insects were captured during the past year, at various points near London, beneath the bark of dead trees. Mr. Janson added that this announcement was made at Mr. Matthews' request, and that he (Mr. M.) is now preparing for publication, in the 'Zoologist,' a supplementary paper to his former valuable contribution on this family.

Mr. Wilson Saunders exhibited a living specimen of Scolopendra morsitans, found in a chest of tea from China, and some living examples of Branchipus stagnalis: this largest and most beautiful of British Entomostraca had lately been found by Mr. Brewer, jun., on Reigate Heath, in some shallow pools which were quite dry during the summer.

Dr. Gray observed that he had noticed this species on Blackheath, in puddles left by rain which had fallen within the previous twenty-four hours.

Mr. Saunders also exhibited some galls on branches of young oaks, also from Reigate, and remarked that they appeared to be those produced by Cynips Quercus-petioli, formerly observed only in Devonshire, but now apparently spreading over the South of England; although they do not contain so much tannin as foreign galls, yet, as they could be obtained in large quantities, he thought it worthy of consideration whether they might not be advantageously collected and employed as a substitute for the foreign article, and the young plantations would certainly be much benefited by the removal of them.

Mr. Westwood remarked that these galls were now found in the Midland Counties as well as in the South of the kingdom.

Mr. Westwood exhibited specimens of the case-bearing larva of Coleophora gryphipennella, which had recently been very injurious to some pot-roses in a greenhouse.

Mr. Waterhouse exhibited British specimens of

Epuræa neglecta, Heer, Sturm, Erichs.
Anisotoma nigrita, Schmidt, Erichs.
Olibrus oblongus, Erichs.

Mr. Waterhouse stated that the first of these insects had long been named, by Mr. Murray, in Dr. Power's collection; that he (Mr. W.) had supposed the insect to be identical with an Epuræa in his own collection, which he made out to be the E. parvula of Sturm, and had not inserted the E. neglecta in the 'Catalogue.' Having, however, recently had an opportunity of comparing the two insects, he was convinced of their being distinct. E. neglecta was taken by Dr. Power, at Holt Forest, near Farnham. A. nigrita was taken by Dr. Power, at Addington, near Croydon: Mr. Waterhouse believed that the insect inserted in his 'Catalogue' as Anisotoma rubiginosa, with a note of doubt, was a small female of the same species. O. oblongus was found by Mr. Squire, at Horning Fen and Whittlesea Mere.

Mr. Waterhouse took this opportunity of mentioning that the following numbers had been omitted in the third edition of his recently published 'Catalogue of British Coleoptera,' *viz.*:—

No. 14 to Hister 12-striatus.
„ 2 to Oxylemus variolosus.

The omission of these numbers caused the names of these species to appear as synonyms of the preceding insects.

Mr. Stevens exhibited a fine Buprestis, allied to Catoxantha, found by Mr. Wallace at Gilolo, of which Mr. Adam White furnished the following description:—

"The Buprestidæ are separated into genera and even into great groups by characters which, in many other families of insects, would be deemed hardly important enough to be regarded as anything but specific. The subgenus, here briefly described, more nearly resembles Catoxantha in the shape of its thorax than Chrysochroa; it has an apparently dull-coloured look, compared with either of the two genera alluded to; its under side is decidedly metallic, except on the last segment of the abdomen beneath; its elytra are strongly grooved, and in their contour considerably resemble Catoxantha, differing in surface and in terminal pointing. It may be called Catoxantha (Demochroa) carinata.

"CATOXANTHA (? DEMOCHROA) CARINATA, *n. s.*

"C. *Elytris viridi-purpurascentibus, creberrime acupunctatis, costis quatuor cultratis elongatis, costa brevi obliqua ad suturam prope basim, apice subtruncato, triapiculato; capite, cæruleo, purpureo et viridi decorato, antice inter antennas subcavato, et cultrato; thorace dorso irregulari, creberrime acupunctato, postice sulculis duobus curvatis longitudinaliter directis, et sulco ad latera singula; thorace, abdomineque subtus purpureis, pilis brevibus subdensis ochraceo-flavis, indutis, pedibus cyaneis, femoribus, basi præsertim, viridi et igneo variegatis, abdominis segmento ultimo subtus pallido flavo, dorso læte metallico-viridi.*

"Hab. in Insula Gilolo. Long. unc. 1, lin. 6."

May 2, 1859.—H. T. STAINTON, Esq., V.P., in the chair.

Donations.

The following donations were announced, and thanks ordered to be presented to the donors:—'Journal of Proceedings of the Linnean Society,' Vol. iii., No. 12; presented by the Society. 'Abhandlungen der Koeniglich Bayerischen Akademie de Wissenschaften,' Vol. iii., Part 2; by the Society. 'The Zoologist' for May; by the Editor. 'The Literary Gazette' for April; by the Editor. 'The Journal of the Society of Arts' for April; by the Society. 'The Entomologist's Weekly Intelligencer,' Nos. 132 to 135, and Vol. v.; 'Manual of British Butterflies and Moths,' Nos. 29 and 30.

Election of a Member.

Douglas Timmins, Esq., of Oriel College, Oxford, was balloted for and elected a Member of the Society.

Exhibitions.

Mr. Stevens exhibited some butterflies taken by Mr. Wallace, in New Guinea, the most conspicuous being a beautiful Hestia, allied to H. D'Urvillei.

Mr. Westwood exhibited a number of specimens of Oxytelus sculptus, one of the smaller Brachelytra, which had been found by a correspondent upon young cucumber plants after dark, four different sowings of which had been destroyed without any trace of the depredator being visible, during the day. It was consequently supposed that wood-lice were the cause of the mischief, but on examining the plant with a light, after dark, vast numbers of this species, with a few individuals of two small species of Philonthus, were captured, which were considered by Mr. Westwood to be the cause of the damage in question, although contrary to the generally-received opinion of the insectivorous habits of the Staphylinidæ. Mr. Westwood referred to the occurrence of great numbers of these insects in decaying Fungi, Boleti and dung, considering that it was on the vegetable matter they fed, as was also the case with the larva of one of the species described in the Linnean 'Transactions,' by Mr. Walford, which destroys young wheat plants by gnawing through the stems.

Several members present dissented from this view, and Mr. F. Smith especially mentioned Oxyporus rufus, which, although always found in Fungi, is evidently, from its structure, a very voracious insect-feeder.

Mr. Westwood exhibited both sexes of Mutilla (Psammothera) flabellata, one of the Aculeate Hymenoptera, from South Africa, anomalous on account of the male possessing bipectinated antennæ, a peculiarity known only to occur in two or three other of the Aculeata. Mr. Westwood regretted that he was compelled to employ this term anomalous after observations made at the last meeting, and subsequently in the 'Intelligencer,' with reference to its alleged impropriety, considering that no other word so completely expressed the peculiarity of an animal which exhibited a departure from the ordinary structure of the group to which it belonged. It was erroneous to assert that it was only our ignorance which compelled us to regard such structures as irregularities or anomalies; on the contrary, it was our knowledge of vast numbers of species belonging to the group in question which enabled us to say what were its regular, normal or ordinary characters.

Mr. Westwood also exhibited three very interesting additions to the British lists. The first of these was the Blatta Acervorum of Panzer, which formed the type of the genus Myrmecophila, and which, although strictly belonging to the family of which the house cricket may be considered as the type, had been regarded by Mr. MacLeay as the osculant form between the Blattidæ, representing the cursorial, and the Achetidæ, representing the saltatorial, Hymenoptera. It had been found in moss by the Rev. F. W. Hope, in the Archdeacon's Copse, near Netley, Shropshire. The second was the Bethyllus depressus of Fabricius (being the type of Klüg's genus Pristocera), and interesting amongst the Hymenoptera as forming one of the connecting links between the Aculeata and Terebrantia; it had also been taken by Mr. Hope, in Shropshire. The third of these insects was the Dryinus formicarius of Latreille, figured in the 'Genera Crustaceorum,' and of the greatest rarity on the Continent. This elegant insect was remarkable for the anomalous structure of its anterior tarsi, which are terminated by a long slender recurved forceps nearly as long as the entire tarsus: a single specimen had been taken by Dr. Baly, at Cobham, in October, and by him presented to Mr. Westwood.

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